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QDR 2010: Implementing the New Path for America's Defense

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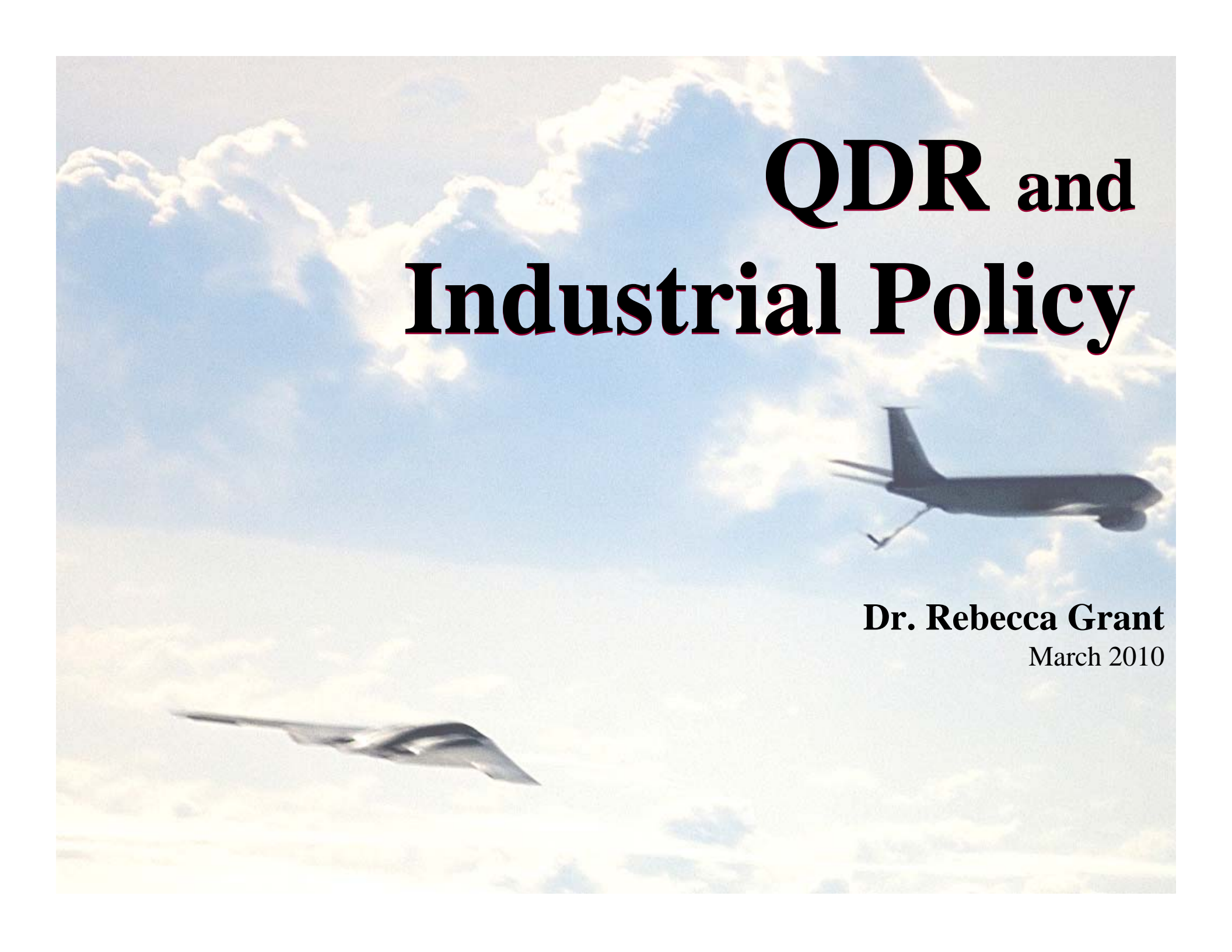
By

Dr. Rebecca Grant



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QDR and Industrial Policy

Dr. Rebecca Grant

March 2010

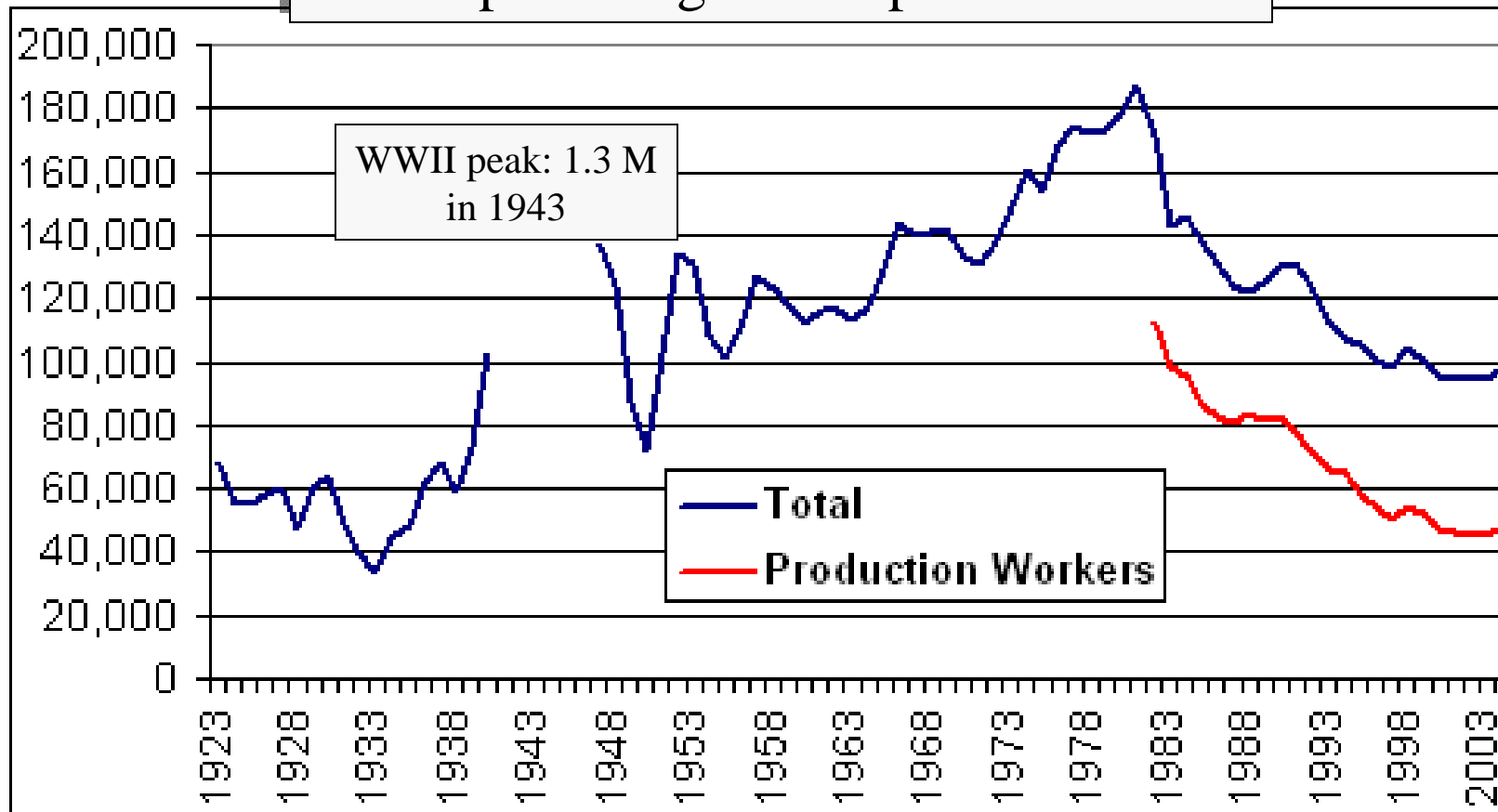
What the QDR Said

- “Unfortunately, the federal government as a whole and the Pentagon in particular have not adequately addressed the changes both within the industry and in the Department’s needs in the current strategic environment.”
- “Remedying the outdated – for decades, largely hands-off – attitude toward the U.S. defense industrial base cannot be done quickly, and change will require a long-term approach undertaken in partnership with industry and Congress.”
- Rely on market forces but be prepared to intervene
- Don’t forget suppliers, financiers, allies
- Lean forward in ongoing assessment

Shipbuilding

- In 2008, about 85,262 manufacturing jobs

US Shipbuilding and Repair 1923-2004



Aerospace Industry at a Glance 2008 Data

- 3,100 firms manufacturing aircraft, spacecraft and guided missiles
- 2008 sales for aerospace parts and products = \$257B
- 503,900 workers averaging 43.8 hours/week (41.1 hrs. avg in other manufacturing work)
- 61% employed in companies with over 1,000 employees
- “not a static entity...highly vulnerable to market conditions and decisions by DoD” – *Marion Blakey, President, AIA*





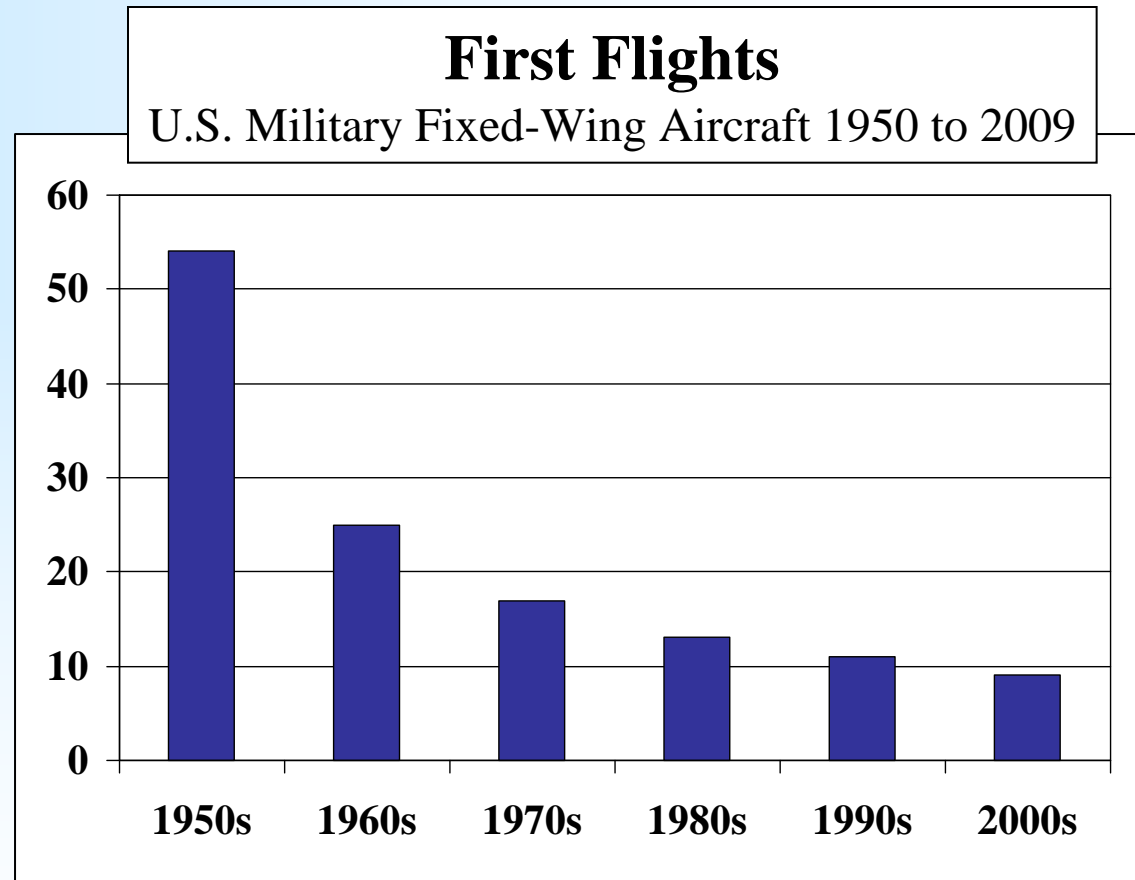
World War II US Aircraft Production

| | |
|---------------------|--------|
| North American | 41,188 |
| Consolidated Vultee | 30,903 |
| Douglas | 30,696 |
| Curtiss | 26,154 |
| Lockheed | 18,926 |
| Boeing | 18,381 |
| Grumman | 17,428 |
| Republic | 15,603 |
| Bell | 13,575 |
| Martin | 8,810 |
| Chance Vought | 7,890 |

Total **229,554**

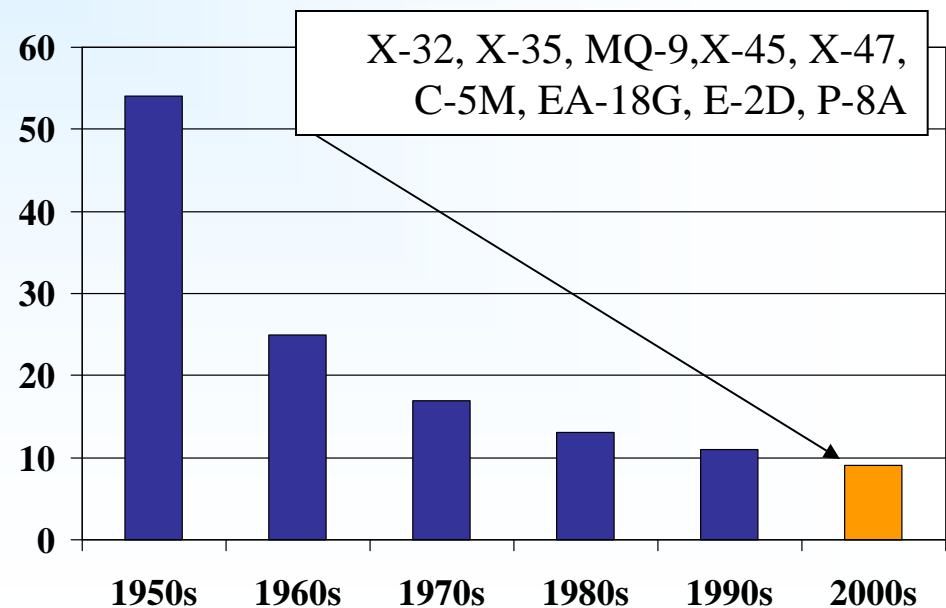
First Flights 1950 to 2009

- Continued 1940s pattern of recapitalization by system
 - Post-war market decline offset by major advances in 1947 to 1949
- 1950s to 1960s saw over a dozen firms making aircraft
- Sustained regional aerospace strengths in California and other regions
- Major aircraft programs focused airframe and subsystem design



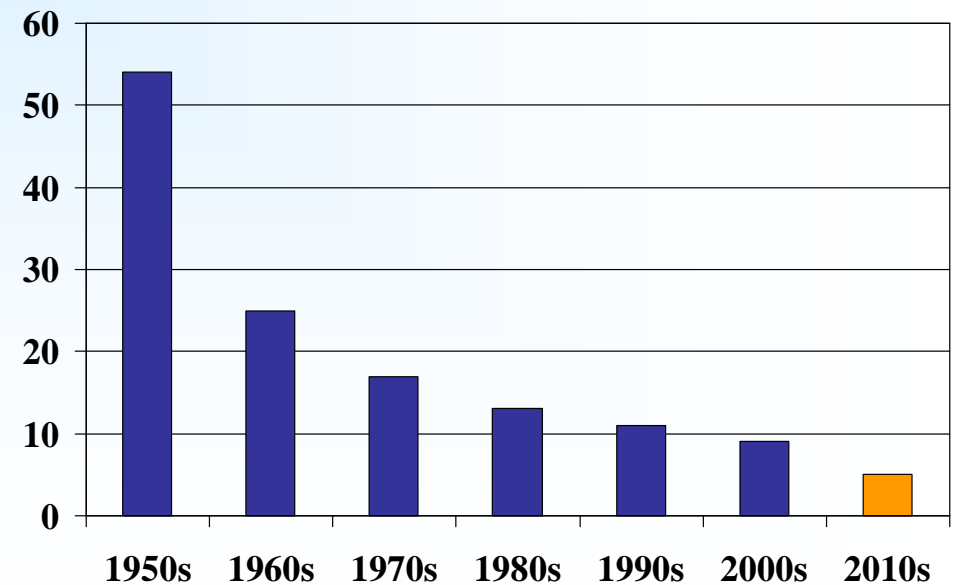
2000s

- Nine first flights through P-8A*
- One major competition for Joint Strike Fighter
 - X-32 and X-35
- Five Navy types including EA-18G, E-2D
 - Experimental aircraft like X-45, X-47 assigned to Navy UCAS
- Will dwindling programs unravel process of sustaining airpower?



2010s?

- Tanker
- Light utility aircraft
- Light attack aircraft
- Stealthy UAVs
- Innovative mobility aircraft
- No current plans for next generation bomber
- No planned fighter first flight
 - Navy F/A-XX?
 - F-22 retirements begin just after 2020



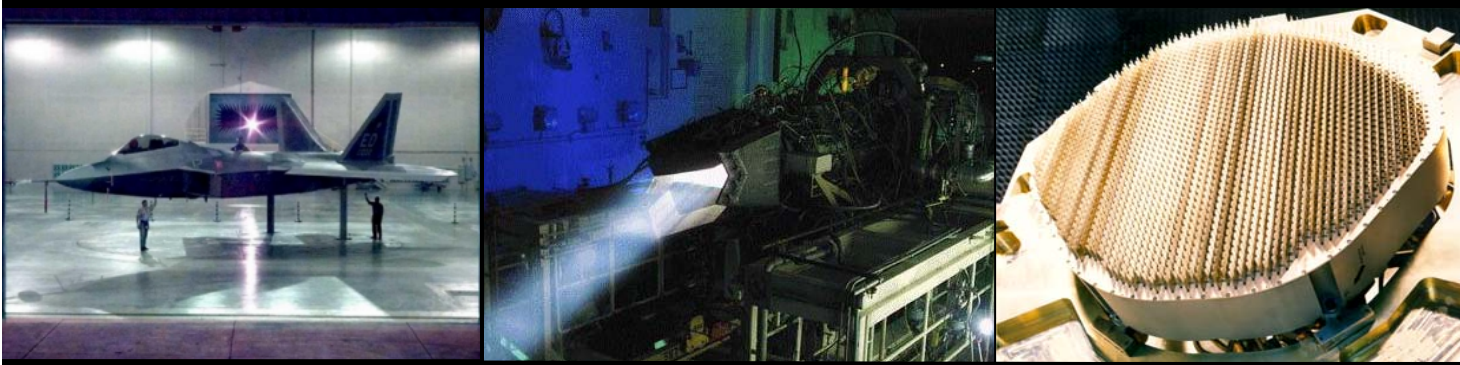
Risk Calculus in the mid-1990s



Undersecretary Kaminski, 1996:

- “We concluded from the **heavy bomber study** that with 20 B-2s, our bomber fleet size and mix will meet our mission needs.”
- “When we examined the specific industrial capabilities needed for the B-2 and previous bombers, we found there is **not a unique bomber industrial base.**”
- “The capabilities required to design, develop and produce bombers are **available in the broader military and commercial aircraft industries.** For example, all 54 of the key B-2 suppliers also supply other aircraft and/or other non-aircraft programs.”

Technology Transition

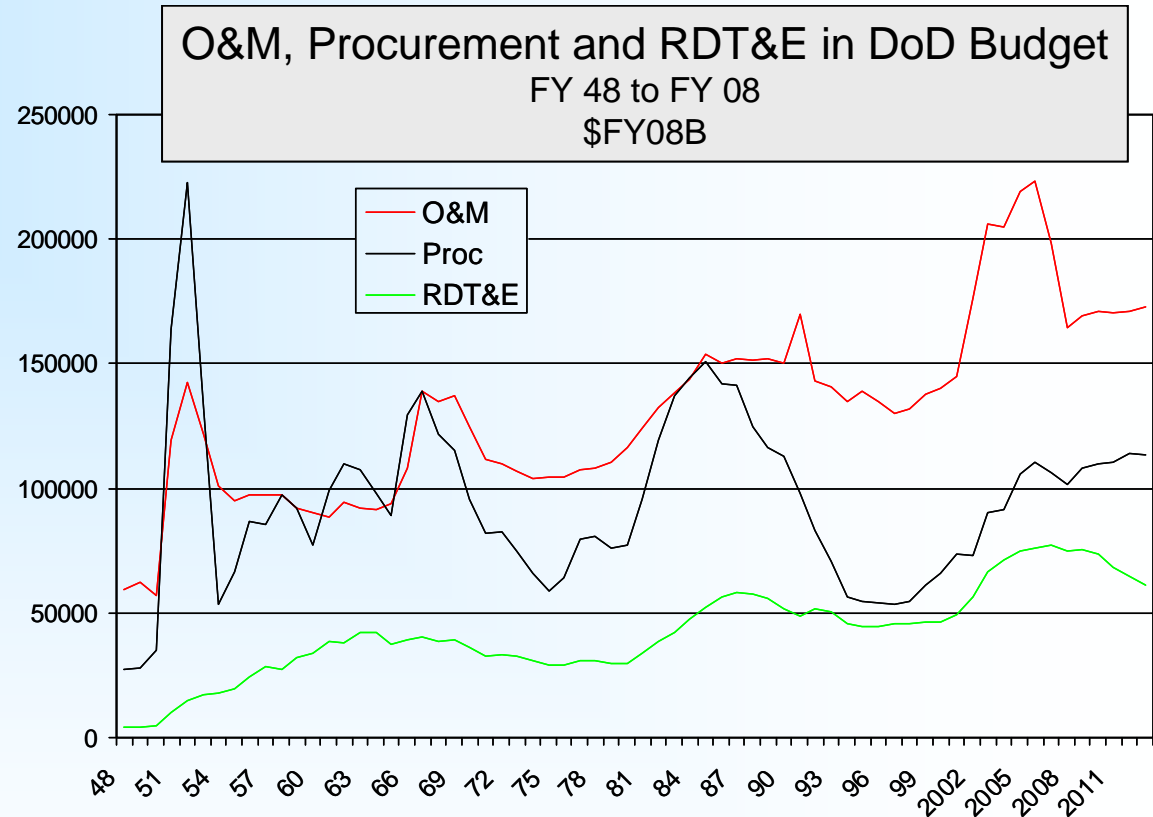


?

- Composites
- Improved stealth design and **materials**
 - Easier to maintain
- Advanced **engines**
- Radars, **sensors** and other systems
- Hypersonic platform
 - Weapons a good possibility
- Space transiting vehicle

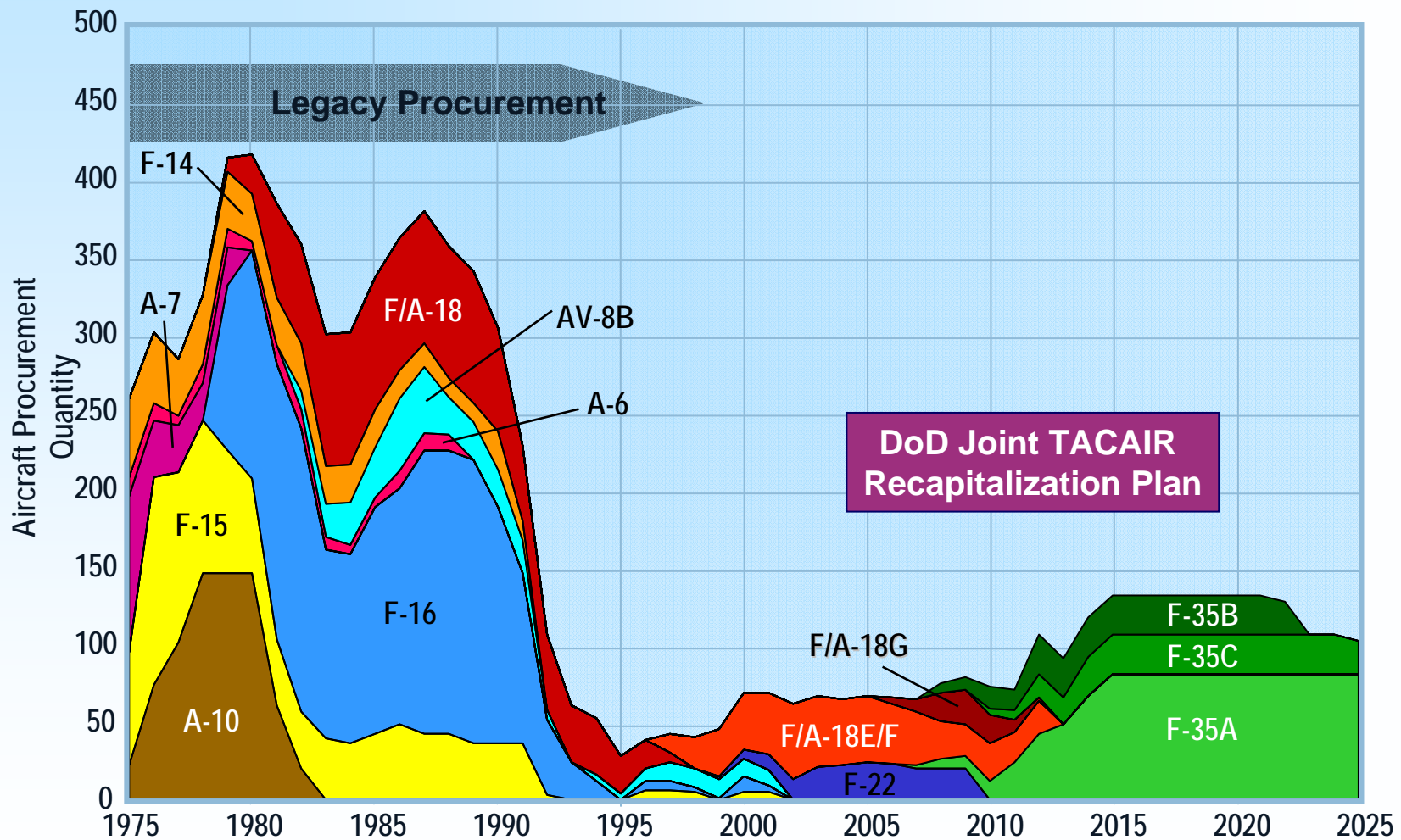
Risk Factors Today

- Defense budget and rising operations and maintenance costs
- Unprecedented gap between topline and procurement
- Failure to capitalize on investment
 - Poor “ROI”
- Lack of planned new starts destabilizes model



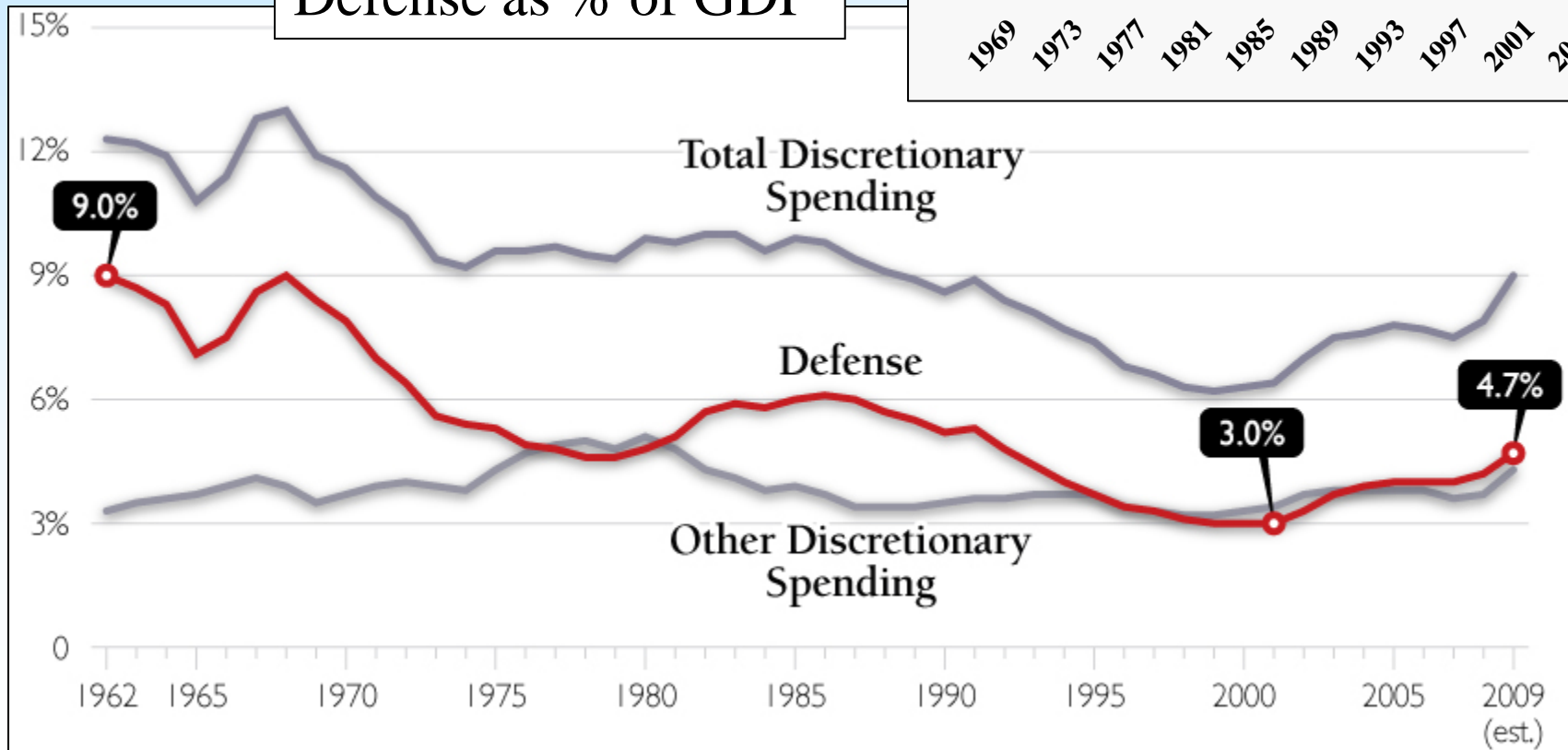
People are the most important aspect of the industrial base

Lower Recapitalization: Program Impact



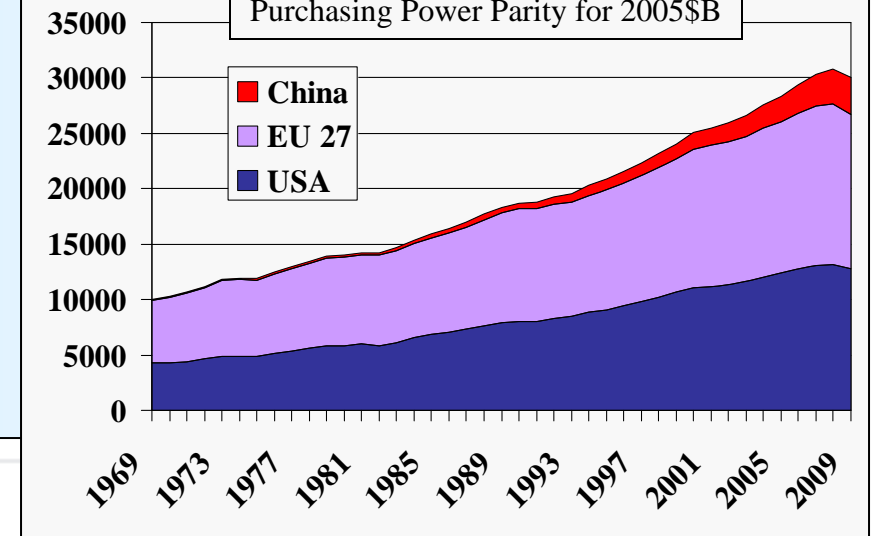
Room to Maneuver

Defense as % of GDP



GDP Growth Trends

Purchasing Power Parity for 2005\$B



Observations and Recommendations

- Keeping the “satisfactory nucleus” of manufacturers is critical
- Aerospace industry thrives on close relationship with customers
 - Only the Wright Brothers truly “went it alone”
- Core industrial policy should be lodged within the Services
 - Air Force and Navy should resume active role in assessing health of aerospace industrial base
 - Already common for shipbuilding, with < one-third of the employment of the aerospace industry
- Invest in technology, not just for “the wars we are in”

Conclusion:

Dawn of the Jet Age

- Me 262 first flight 1941
- Airacomet first flight 1942
- P-80 first flight 1944
- Major production post-WWII
- Would jet age have progressed with investment focused on “the wars we were in?”

